

REMARKS

- (1) Claims 3-14 and 23-37 are pending in the present application. Applicant cancelled claims 1, 2, and 15-22 herein. Applicant added new claims 23-37 herein, but no new matter has been added.
- (2) The Office Action cited U.S. Patent 6,656,852, by Rotondaro et al., entitled *Method for the Selective Removal of High-K Dielectrics* (referred to as "Rotondaro" hereinafter).
- (3) Claims 1-2, 4, 6-8, 11, 15, 17, and 20-21 have been rejected under 35 U.S.C. § 102(e) as assertedly being anticipated by Rotondaro. Claims 4 and 13-14 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over Rotondaro. Claims 3, 10, 16, and 22 have been rejected under 35 U.S.C. § 112, second paragraph, as assertedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 9, 12, and 18-19 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim. Applicant respectfully traverses these rejections and objections for the following reasons.

Claims 1-2 and 15-22

Claims 1-2 and 15-22 are cancelled herein.

Claims 3-8, 11, 13, and 14

Claim 3 is now an independent claim and claims 4-8, 11, 13, and 14 now depend therefrom. Claim 3 was rejected under 35 U.S.C. § 112, second paragraph. More specifically, the Office Action stated that "the word 'spaccrs' should read 'spacers'" as a grounds for rejection of claim 3. Applicant agrees. If the copy of the patent application received by the Examiner reads "spaccrs," this is most likely an error in reproduction produced at the patent office. Specimen A is attached herewith and provides a true copy of Applicant's file copy of Claim 3 as originally filed, in which the term "spacers" was provided in claim 3. However, Applicant amends claim 3 to ensure that "spacers" is spelled correctly.

Claim 3 formerly depended from rejected and now cancelled claim 1. Applicant has incorporated claim 1 into claim 3 by amendment to make claim 3 an independent claim. Claim 3 has not been narrowed by this amendment. Also, Applicant amended claims 4-8, 11, 13, and 14 to make them depend from claim 3 instead of claim 1.

Rotondaro does not disclose, teach, suggest, or motivate "a method of fabricating a semiconductor device" that includes "providing spacers along sidewalls of the patterned conductive layer," "wherein the first and second etches of the high-k dielectric layer are performed, at least in part, in alignment with the spacers," as claim 3 requires. Accordingly, Applicant respectfully asserts that independent claim 3 is patentable over Rotondaro.

Because claims 4-8, 11, 13, and 14 depend from claim 3, Applicant respectfully submits that claims 4-8, 11, 13, and 14 are patentable over Rotondaro because of their dependency from independent claim 3 for the reasons discussed above.

Claims 9 and 23-27

Claim 9 is now an independent claim and new claims 23-27 depend therefrom. The Office Action stated that Claim 9 was "objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim." Claim 9 formerly depended from rejected and now cancelled claim 1. Applicant has incorporated claim 1 into claim 9 by amendment to make claim 9 an independent claim. Thus, Applicant respectfully submits that the objection to claim 9 is overcome by rewriting it in independent form. Claim 9 has not been narrowed by this amendment. Because claims 23-27 depend from claim 9, Applicant respectfully submits that claims 23-27 are patentable because of their dependency from independent claim 9.

Claims 10 and 28-32

Claim 10 is now an independent claim and new claims 28-32 depend therefrom. Claim 10 formerly depended from rejected and now cancelled claim 1. Applicant has incorporated claim 1 into claim 10 by amendment to make claim 10 an independent claim. Claim 10 has not been narrowed by this amendment.

Claim 10 was rejected under 35 U.S.C. § 112, second paragraph. More specifically, the Office Action stated that claim 10 "is confusing, and should be reworded." The Examiner asked, "how does the second etch step etch the high dielectric layer after the ashing step when the ashing step has already removed the portion of the high dielectric layer remaining after the first etch step?" Applicant respectfully notes that Claim 10 does not require the ashing to remove the remaining portion of the high-k dielectric layer. Applicant respectfully refers the Examiner to paragraphs [0025] and [0026] of the patent application, which discuss the plasma ashing.

Thus, Applicant asserts that claim 10 is not confusing, and that claim 10 does not need to be reworded. Applicant respectfully submits that claim 10 is patentable. Because claims 28-32 depend from claim 10, Applicant respectfully submits that claims 28-32 are also patentable because of their dependency from independent claim 10.

Claims 12 and 33-37


Claim 12 is now an independent claim and new claims 33-37 depend therefrom. The Office Action stated that Claim 12 was "objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim." Claim 12 formerly depended from rejected and now cancelled claim 1. Applicant has incorporated all of claim 1 into claim 12 by amendment to make claim 12 an independent claim. Thus, Applicant respectfully submits that the objection to claim 12 is overcome by rewriting it in independent form. Claim 12 has not been narrowed or broadened by this amendment. Because claims 33-37 depend from claim 12, Applicant respectfully submits that claims 33-37 are patentable because of their dependency from independent claim 12.

(4) In view of the above, Applicant respectfully submits that the application is in condition for allowance and requests that the case be passed to issuance. If the Examiner should have any questions, Applicant requests that the Examiner contact Applicant's attorney at the address below. The total number of claims increased by five and the number of independent claims increased by one. Hence, please charge the fee of \$176 (5 x \$18 = \$90; and \$90 + \$86 = \$176) to Deposit Account No. 50-1065. In the event that there are any other fees due herein to keep the

application pending, other than an issue fee, please charge the same, or credit any overpayment, to Deposit Account No. 50-1065.

Respectfully submitted,

9/10/2004
Date


Barry W. Dove
Attorney for Applicant
Reg. No. 45,862

SLATER & MATSIL, L.L.P.
17950 Preston Rd.
Suite 1000
Dallas, Texas 75252
Tel. 972-732-1001
Fax: 972-732-9218

Specimen A

WHAT IS CLAIMED IS:

COPY

1. A method of fabricating a semiconductor device, comprising:
providing a layer of high-k dielectric material over a substrate;
providing a layer of conductive material over the high-k dielectric layer;
patterning the conductive layer;
performing a first etch on the high-k dielectric layer, wherein a portion of the high-k dielectric layer being etched with the first etch remains after the first etch;
performing a second etch of the high-k dielectric layer to remove the remaining portion of the high-k dielectric layer, wherein the second etch differs from the first etch.
2. The method of claim 1, wherein the first and second etches of the high-k dielectric layer are performed in alignment with the patterned conductive layer.
3. The method of claim 1, further comprising:
providing spacers along sidewalls of the patterned conductive layer, wherein the first and second etches of the high-k dielectric layer are performed, at least in part, in alignment with the spacers.
4. The method of claim 1, wherein the first etch is a dry etch process.
5. The method of claim 4, wherein the dry etch process is a reactive ion etching process using an etch chemistry comprising at least one of inert gas, chlorine, and fluorine.
6. The method of claim 1, wherein the second etch is a wet etch process.

COPY